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The Perversity of Preferences

The Generalized System of Preferences and Developing Country Trade Policies, 1976–2000

Çaglar Özden
Eric Reinhardt

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Abstract

Industrial countries maintain special tariff preferences, namely the Generalized System of Preferences (GSP), for imports from developing countries. Critics have highlighted the underachieving nature of such preferences, but developing countries continue to place the GSP at the heart of their agenda in multilateral negotiations. What effect do such preferences have on a recipient's own trade policies? Özden and Reinhardt develop and test a simple theoretical model of a small country's trade policy choice, using a dataset of 154 developing countries from 1976 through 2000. They find that countries removed from the GSP adopt more liberal trade policies than those remaining eligible. The results, corrected for endogeneity and robust to numerous alternative measures of trade policy, suggest that developing countries may be best served by full integration into the reciprocity-based world trade regime rather than continued GSP-style special preferences.

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The Perversity of Preferences: GSP and Developing Country Trade Policies, 1976-2000*

Çaglar Özden† and Eric Reinhardt‡

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†Corresponding author. Dept of Economics, Emory University and World Bank. Mailing address: International Trade Unit, World Bank Mailstop: MC3-303. 1818 H Street NW Washington, DC 20433. E-mail: cozden@worldbank.org. Phone: 202-473-5549.

‡Dept of Political Science, Emory University, Atlanta, GA 30322. Email: erein@emory.edu Web: http://userwww.service.emory.edu/~erein/.

1 Introduction

The United Nations [2001] declaration that "increased trade is essential" for the world's poor countries "to reap the potential benefits of globalization" is a commonly shared view. This principle is enshrined in the postures industrialized countries and international institutions adopt in dealing with developing countries. Yet there is a lively political and theoretical debate on how best to accomplish this end. The prevailing approach, known as "special and differential treatment", grants certain products from developing countries preferential access to industrialized countries' markets without reciprocal liberalization in turn. The Generalized System of Preferences (GSP) is the leading instrument for such nonreciprocal trade preferences. Advocates contend that GSP should "increase the export earnings, ... promote the industrialization, and ... accelerate the economic growth" (GATT [1972]) of recipient countries. Even now, 31 years after General Agreement on Tariffs and Trade (GATT) members first authorized GSP as a "temporary" measure, it remains "highly popular" among developing country beneficiaries (Jackson [1997]). Strengthening preferential market access without reciprocal obligations is the centerpiece of the developing world's agenda in the current "Development Round" of multilateral trade negotiations (WTO [1999, 2000], Panagariya [2002a]).

For critics, however, nonreciprocal preferences like GSP are a "Faustian bargain" (World Bank [1987]). As numerous empirical studies have demonstrated, protectionist forces in advanced industrial states severely restrict GSP benefits. For instance, such preferences are typically revoked when they actually start to boost the recipients' exports, as shown in Özden and Reinhardt [2002]. The problem is that nonreciprocal preferences like GSP lie outside the purview of the binding GATT legal system, so they can be unilaterally modified or cancelled by donor countries at any time. Hence, critics advocate turning developing countries into regular participants who swap trade concessions for reciprocal market access (Panagariya [2002b]; Whalley [1990]; Krueger [1995]).

The theoretical literature does not provide answers to this policy debate. Starting with the pioneering work of Johnson [1953-4], the literature recognizes the efficiency-increasing properties of trade negotiations, especially in the presence of terms-of-trade externalities. Bagwell and Staiger [1999] show that *reciprocal* liberalization enables trading partners to internalize these externalities and reach Pareto superior outcomes compared to protectionist policies. Krishna and Mitra [2000] and Coates and Ludema [2001] construct stylized political-economy models that show *unilateral* liberalization by a large country may induce small developing country trade partners to liberalize under certain conditions. Thus, although trade liberalization is one of the most strongly advocated development policies, there is no agreement on whether reciprocal or unilateral liberalization by developed countries would best induce such behavior among developing countries.

This paper asks how nonreciprocal preferences such as GSP affect the trade policies of beneficiary countries. The answer is important for both the policy and the theoretical debate. In particular, we argue that nonreciprocal preferences have the perverse effect of

delaying trade liberalization by recipients. That is, developing countries withdrawn from GSP subsequently lower their trade barriers more than countries remaining eligible for such preferences. The reason is simple. Governments set trade barriers while balancing political support from import-competing and export sectors. GSP shifts the balance to the import-competing sector. As Hudec [1987] observed, "the non-reciprocity doctrine tends to remove the major incentive that [developing country] export industries have ... for opposing protectionist trade policies at home ... instead of trying to enlist the support of the export sector for liberal trade policy." Furthermore, if there is a threat of removal from the GSP program when its exports increase significantly, then the recipient has the perverse incentive to implement even more protectionist policies to limit its exports and avoid such outcomes. On the other hand, if GSP is withdrawn and access to the export market becomes conditional on its own trade policy through the reciprocity rule, the recipient government's optimal level of protectionism declines.

We develop this argument using a simple two-sector general equilibrium model of a small country where the optimal trade policy may be influenced by political economy motivations. This paper's chief contribution is, however, empirical. We provide the first extensive evidence on the effects of the GSP program on beneficiaries' own trade policies. Specifically, we test the effects of GSP removal on beneficiaries' trade policies using a dataset of annual observations of 154 developing countries since the United States started the program in 1976. We demonstrate that countries dropped from GSP subsequently adopt lower trade barriers than those remaining eligible for nonreciprocal (as opposed to reciprocal) preferences. These findings control for income, market size, geography, growth, and other factors; they are robust to five different measures of trade barriers; and they hold when correcting for possible endogeneity of the US GSP program.

Writing before they were implemented, Harry Johnson argued that nonreciprocal preferences would fail if developing countries did not cease import substitution practices that create "cost disadvantages ... frequently ... far greater than the competitive advantage that could be conferred by preferences from the developed countries" (Johnson [1967]). We go one step further, in claiming that nonreciprocal preferences actually *delay removal* of the very policies Johnson said would make GSP ineffective. To the extent that GSP's perverse effects are magnified by donors' protectionism, our findings support critics who argue against unilateral modification of GSP commitments. If increasing trade is indeed a key to development and growth, then developing countries would be better served by abandoning reliance on nonreciprocal preferences altogether, becoming members with full responsibilities and thus rights in the world trading regime. We accordingly conclude, with Roessler [1998], that "the cause of development was manifestly not served by releasing developing countries from their GATT obligations."

Our results have farther-reaching implications, especially for the future of the multilateral trading regime. Recent decades have witnessed the proliferation of discriminatory and non-reciprocal practices that push both the letter and the spirit of the GATT/WTO rules to their limits. There can be little doubt that GATT/WTO's twin principles of non-discrimination

and reciprocity contributed significantly to the success of the multilateral negotiations for trade liberalization (Jackson [1997]). The place of programs like GSP in the regime must be rationalized if the WTO is to continue as the basis of future liberalization efforts, especially those, like the Doha agenda, dealing principally with developing countries. As our paper shows, these programs damage trade liberalization efforts in two distinct ways. First, they prolong protectionism among recipient countries. Second, and more importantly, developing countries have no avenues to protect their rights since these policies are outside WTO jurisdiction, permitting donor countries to change these programs as they wish.

The next section outlines the main features of the GSP program and surveys some relevant literature. Then we provide a brief model that leads to the conjectures tested in the empirical section, followed by sections describing the data, the econometric model, and the empirical results along with extensions. Conclusions follow.

2 GSP Basics

The Generalized System of Preferences is composed of trade preferences granted by the developed world to developing countries *en masse* on a nonreciprocal basis, i.e., without market access concessions in return. It was first proposed by the United Nations Conference on Trade and Development (UNCTAD) during the Kennedy Round to encourage the participation of developing countries in GATT.[1] The main principle of GSP is to provide better-than-MFN ("most-favored nation") treatment to imports from qualifying countries. For instance, the United States' GSP program sets a zero tariff on 6,409 articles from beneficiary states (out of total 15,467 tariff lines) while other countries face higher MFN tariffs.

GSP clashes with two critical principles of the multilateral trade regime (Hudec [1987]). The first is reciprocity, the strategic mechanism through which states can escape Prisoner's Dilemma problems in trade negotiations. The second is nondiscrimination, the main pillar of the regime as encoded in Article I of the 1947 GATT text. Recognizing these inconsistencies, GATT members approved special waivers for GSP, temporarily in 1971, and permanently in 1979 through the "Enabling Clause" of the Tokyo Round agreements. However, the Enabling Clause lacks effective guidelines on GSP implementation, allowing donors to design their schemes "as they see fit" (GAO [1994]; Hudec [1987]; Jackson [1997]). In sharp contrast to reciprocal GATT concessions, "he who giveth may taketh away" freely in the context of GSP-conferred market access.

The United States was the last country to enact such preference schemes, taking effect in January 1976. The 1974 Trade Act allows the President to confer GSP eligibility on

[1]The US also administers the Caribbean Basin Initiative, the Andean Community preference, and a even more preferential system in favor of "least developed countries," a subset of the poorest GSP-eligible states; but GSP in 2000 covered about 75 percent of all such US preferential imports. The European Union maintains the Lomé Convention, a better-than-GSP scheme for former colonies in Africa, the Caribbean, and the Pacific.

any country except those which (a) harbor international terrorists, (b) nationalize American property without compensation, (c) are members of a commodity export cartel causing "serious disruption to the world economy," or are (d) communists (except those with permanent normal trading status). The law stipulates other criteria that may be used in eligibility decisions, such as (a) level of economic development, (b) protection of workers' and human rights and (c) whether the country receives preferences from other countries. Also, specific products may be removed from eligibility if the exports exceed a certain "competitive need limit," currently $100 million per tariff line, per year, per country. The President has discretion over when and how to apply these criteria. In practice, an Assistant US Trade Representative chairs an interagency committee which makes decisions after reviewing petitions from interested parties (the country in question, import competing domestic firms, relevant US labor unions, intellectual property groups, human rights/environmental NGOs). GSP eligibility can be removed at the country, product, or country-product level. Out of 154 eligible countries, 36 have "graduated" from the GSP program since 1976[2] (e.g., Singapore, Hong Kong, Taiwan, Korea, Malaysia, Mexico, Botswana). The list of major countries remaining eligible includes Brazil, India, Russia, Indonesia, Turkey, South Africa, and Thailand.[3] Because GSP decisions are legally unilateral, import-competing lobby groups have effectively made GSP the last bastion of truly unregulated protectionism in the United States (Hudec [1987]).

Existing studies of GSP focus on recipients' export performance, highlighting several common points. First, GSP programs — and not just that of the United States — fail to cover some products in which beneficiary states have the greatest comparative advantage, such as textiles.[4] In 2000, for instance, just 47 percent of the $175.6 billion of US imports from GSP beneficiaries were in tariff lines listed under the program (USITC [2002]). Second, by invocation and even more by anticipation, the export ceilings on GSP product eligibility are often binding.[5] Third, complexity of the system (especially its rules of origin paperwork) and technical incapacity of developing country exporters inhibit full use of GSP preferences even when eligibility is not a problem (UNCTAD [1999, 2001]). Fourth, as Clark and Zarrilli [1992] demonstrate empirically, GSP donors disproportionately substitute non-tariff for tariff protection on sensitive GSP-eligible products. Not surprisingly, the universal conclusion of numerous empirical studies is that GSP has underperformed, yielding at best a "modest" increase in imports from beneficiary states, with some of those gains due merely to trade diversion.[6] To quote Whalley [1990], "available quantitative studies ... seem to point to the conclusion that special and differential treatment has had only a marginal effect on country economic performance, especially through GSP."

Surprisingly, however, no studies have examined how nonreciprocal trade preferences af-

[2]Being dropped from the program is often called "graduation," because in many (but not all) cases the stated rationale is a sufficiently high per capita income.

[3]Some dropped countries were subsequently reinstated.

[4]WTO [2000], UNCTAD [1999, 2001], Ray [1987], Devault [1996].

[5]MacPhee and Rosenbaum [1989], Hoekman and Kostecki [2001], Finger and Winters [1998].

[6]MacPhee and Oguledo [1991]; Brown [1987, 1989]; Grossman [1982]; Sapir and Lundberg [1984].

fect a recipient's own trade policy. So far this subject has been a matter of mere conjecture. For example, Hudec [1987] argues that, by removing "external legal constraints," GSP undercuts the ability of a developing country leader to tie his hands when facing protectionist pressures, even "making things worse by giving greater legitimacy to claims for trade protection." Roessler [1998] somewhat more cynically agrees, claiming that GSP "provided developing countries with a justification for refusing to make market-access commitments." Finger and Winters [1998] likewise observe that "the wish to maintain preferences could undermine developing countries' willingness to invest in rounds of negotiated trade liberalization."[7]

Recent theoretical on the role of reciprocity recognizes its efficiency increasing properties. Specifically, Bagwell and Staiger [1999] argue that reciprocal liberalization enables large trading partners to internalize the terms-of-trade externalities inherent in multilateral trade negotiations, enabling them to reach Pareto superior outcomes.[8] A second set of papers asks whether unilateral liberalization by a large country can cause a small country to liberalize as well. Krishna and Mitra [2000] and Coates and Ludema [2001], in particular, emphasize political economy mechanisms through which the large country's unilateral liberalization modifies the lobbying game inside the smaller country and induces liberalization. Hence, in terms of the large country's policy choice, the contrast for Bagwell and Staiger [1999] is between protectionism and reciprocal liberalization, while for the latter papers it is between protectionism and unilateral liberalization. To evaluate the effects of GSP in a world otherwise dominated by GATT-based reciprocity, however, the appropriate contrast is between *unilateral* and *reciprocal* liberalization, from the standpoint of a developed state vis-á-vis developing country imports. We develop a simple model to this end in the next section.

3 Model

We consider an import and an export sector in a small country whose trade policies can only influence domestic prices but not world prices. All variables related to the import (export) sector are identified by the superscript m (x). The domestic price of the import good is denoted by p^m and its foreign market price by p_w^m. Similar variables (p^x and p_w^x) are defined for the export good. Variable $p = p^m/p^x$ ($p_w = p_w^m/p_w^x$) is the relative price ratio faced by consumers and producers in the domestic (world) market. Furthermore, p_w is the inverse of the terms of trade for the small country.

We assume that the only policy tool available to the government is the tariff (or the subsidy) on the import good. This might seem restrictive but, in general equilibrium settings,

[7]See also Nowzad [1978]; Michalopoulos [1999] .

[8]McLaren [1997] provides an interesting model highlighting the importance of commitment to trade liberalization in the presence of sunk costs. One of the benefits of reciprocal liberalization under GATT is this commitment value.

the Lerner symmetry theorem allows us to focus only on the trade policy in one sector. Import policies are certainly more common in practice. We express the trade policy parameter as t, which is one plus the non-prohibitive ad valorem tariff rate in the domestic market. This implies $p = tp_w$ since $p^x = p_w^x$. We further have that $dp/dt > 0$ and $\partial p_w/\partial t = 0$, since this is a small country.

Production of the import and the export goods in this country is characterized by a production possibilities frontier. The domestic price ratio p determines the marginal rate of transformation and the production levels ($Q^x(p)$ and $Q^m(p)$) of the two goods.[9] The demand functions $D^m(p,T)$ and $D^x(p,T)$ are also determined by the domestic price ratio p and the overall tariff revenue T, which is distributed to the consumer. Tariff revenue is a function of domestic and world prices, which makes domestic demand a function of these as well. Next we impose a balanced trade constraint: $p_w[D^m(p,p_w) - Q^m(p)] = [Q^m(p) - D^m(p,p_w)]$. Thus, the exogenous world price p_w and the tariff rate t determine the domestic price level p, and this, in turn, determines the demand and supply levels of both goods as well as the tariff revenue.[10]

Government preferences are represented through a very general objective function that depends on endogenous domestic and exogenous world prices as parameters, following Bagwell and Staiger [1999]: $G(p,p_w) = G(p(t,p_w),p_w)$. This is somewhat different than the norm in most papers, where the objective is a simple function of the tariff rate, but there is no loss of generality. We impose the restriction that the improved terms of trade lead to higher welfare for the government when the domestic prices are fixed: $\partial G(p,p_w)/\partial p_w < 0$.[11] This structure is quite general: most models of trade policy formation[12] can be represented this way.

The optimal trade policy t^* is given by the first order condition:

$$\frac{dG}{dp}\frac{dp}{dt} = 0 \tag{1}$$

We assume that the second order condition is satisfied: $G_{pp} < 0$. We should note that the optimal policy is free trade ($t = 1$) in most models regardless of world prices if the government were to maximize social welfare. The presence of positive tariffs ($t > 1$) implies that political economy motivations are in place. The optimal trade policy might also be a function of exogenous world prices p_w.

[9]The production possibilities frontier can be derived from a specific factors model in which each sector employs two factors. One of these factors (capital) is sector-specific and is supplied in fixed quantities while the other (labor) is mobile. An increase in the price of the import good (and thus an increase in p) increases the demand for labor employed in that sector and the wage which, in turn, decreases the profit level in the export sector. This structure is quite different than the ones found in some papers (such as Grossman and Helpman [1994]) where labor is assumed to be in excess supply and to have a constant price so that are there are no production externalities between sectors. This model is presented in more detail in an earlier version of the paper. It is available upon request.

[10]For a more detailed version of this setting, see Bagwell and Staiger [1999].

[11]We should note that p_w is the inverse of the terms of trade given the way we defined our variables.

[12]Grossman and Helpman [1994] and see Rodrik [1995] for an extensive survey.

3.1 Granting GSP

What happens to t^* when the small country receives nonreciprocal preferences? The GSP status granted by the United States and other developed countries allows a developing country to export its goods to these markets without the regular tariffs applied to other suppliers. This special treatment increases the price exporters from GSP-eligible countries receive for their products, because the GSP donor markets are big enough to affect the world prices through their trade policies. In other words, being included in the GSP program is equivalent to an increase in the exogenous variable p^x or a decline in p_w in our model.[13] If we totally differentiate the first order condition (1), we obtain $dt^*/dp_w = -\left(G_{pp}t + G_{pp_w}\right)/G_{pp}p_w$ or

$$sign\left(\frac{dt^*}{dp_w}\right) = sign\ \left(G_{pp}t + G_{pp_w}\right)$$

We know that $G_{pp} < 0$ but the sign of G_{pp_w} is ambiguous and, actually, in most models, it is positive. Thus the impact of the initial conferral of GSP (a decline in p_w) on the small country's optimal trade policy (t^*) is also ambiguous; it depends on the details of the model at hand. Note that the baseline for comparison here is a unilaterally protectionist regime by the large, donor state.

A decline in p_w (or increase in p_x) is equivalent to unilateral liberalization by a large country, and this is analyzed in the models by Krishna and Mitra [2001] and Coates and Ludema [2001]. They show that, under certain assumptions about the underlying political economy framework, this causes the small country to liberalize. Our simple scenario, on the other hand, states that it is not possible to derive unambiguous results about the impact of a movement from a unilaterally protectionist regime to a unilaterally liberal regime by large countries. That is, our generic model highlights the sensitivity of their results to assumptions about the domestic political economy setting. However, that is not this paper's main concern; rather, we aim to compare *unilateral liberalization* (via GSP) to *reciprocal liberalization* (as in GATT/WTO). And, in this respect, the results are more clear.

3.2 Imposing Reciprocity

Reciprocity has always been one of the most important norms of GATT negotiations. The general principle of reciprocity requires countries to lower their tariff rates and other trade barriers together, at least roughly balancing the market access concessions offered by other members. Thus Pareto efficient outcomes can be achieved compared to the inefficiencies of unilateral tariff choices. The methods of implementing reciprocity and assessing the balance

[13] Note that p_w is actually the terms of trade faced by exporters and importers trading with the large country. In the absence of GSP this is identical to the actual world price. However, under GSP the terms of trade differ from the actual world price, as these firms do not have to pay tariffs due to their preferential status.

of concessions have changed from one GATT round to the next, but the general principle has prevailed since the first days of GATT (Hoekman and Kostecki [2001]).

Once a country "graduates" from GSP, it is no longer eligible for the (positive) discriminatory treatment and duty-free access to the US market. Furthermore, if the graduating country wants to receive the MFN tariffs granted by the United States to its other WTO partners, it may be compelled to reciprocate by lowering its own barriers to imports, especially for those coming from the US. In other words, the principle of reciprocity imposes a conditionality on the export prices of the developing country in terms of the domestic prices of its imports. We represent this conditionality in very general terms as $p^x = f(p^m)$ where $f' < 0$.

We must emphasize, however, that we are not offering a positive model of the donor state's decision to impose such reciprocity. Indeed, the incentives for the US to demand such reciprocity may decline with the market size of a GSP beneficiary. On the other hand, there are many other economic or institutional reasons to the demand for reciprocity by the US as well. Our claim here thus addresses the consequences of a policy change by the GSP donor state.

Returning to the model, we see that the reciprocity rule implies that a higher domestic tariff rate t on the import goods leads to lower export prices p^x and worsened terms of trade p. Under reciprocity, the objective function of the government becomes

$$G(p, p_w) = G\left(\frac{p^m}{f(p^m)}, \frac{p_w^m}{f(p^m)}\right)$$

where $p^m = tp_w^m$. The tariff rate is again the only decision variable for the government. However, unlike the previous section, the tariff rate chosen by the government influences p^x and, therefore, the domestic price ratio p *and* the terms of trade p_w. The first order condition of the objective function under the reciprocity rule is

$$[1 - f'p] G_p - f'p_w G_{p_w} = 0$$

We know that $G_{p_w} < 0$ and $f' < 0$, which imply $G_p = \frac{f'p_w}{1-f'p} G_{p_w} > 0$.

The critical question is whether the withdrawal of GSP (and the attendant shift to reciprocity) leads to a lower equilibrium tariff rate t. To answer this question, let p_{GSP}^x denote the export prices under the GSP program, t_{REC}^* (t_{GSP}^*) be the equilibrium tariff rate under reciprocity (GSP), and p_w^m be identical under the GSP regime and the reciprocity rule. Then, suppose the tariff rate chosen under the reciprocity rule leads to the same export prices as the GSP regime. In other words, the developing country government chooses tariffs so that it receives the same tariffs on its exports as it did under GSP: $f(t_{REC} p_w^m) = p_{REC}^x = p_{GSP}^x$. Therefore, the export prices p^x (and hence the terms of trade p_w) are the same under the two regimes, but the import prices p^m (and therefore domestic prices p) might be different due to differences between the equilibrium tariff rates t_{REC}^* and t_{GSP}^* . But we have $G_p > 0$

in equilibrium under the reciprocity rule, while $G_p = 0$ under GSP. This implies that p^m_{REC} and p_{REC} are lower than p^m_{GSP} and p_{GSP}, respectively, since G is a concave function of p, and p^x is the same under the two regimes. The next statement summarizes this result.

Conjecture 1 *Suppose the reciprocity rule leads to the same world prices for the export good x (i.e., yielding the same tariffs from the United States) as the GSP regime. Then the equilibrium tariff implemented under the reciprocity rule is lower than the one implemented under GSP.*

This conjecture states that removing a developing country's eligibility for GSP, and thus giving market access only in exchange for reciprocal tariff reductions, indeed induces the developing country to reduce its import barriers. The reciprocity rule compounds the costs — by lowering export prices — of the developing country's decision to maintain higher tariffs. This increase in the marginal cost of tariffs lowers their equilibrium level. In other words, if a developed country liberalizes its trade policies reciprocally, within the scope of the GATT/WTO regime, it will induce more liberalization by developing countries than if it had liberalized unilaterally, as under GSP. Removing a beneficiary from GSP should thus cause it to adopt more liberal trade policies.

4 Data and Variables

This section tests the hypothesis that countries dropped from the GSP program adopt more liberal import policies than those remaining on GSP. We construct a dataset with one observation per year per independent developing country, from its first year as a United States GSP beneficiary (minimum 1976, the start of the program) through 2000. Our definition of "independent" follows the official US GSP manuals (e.g., USTR [1999]).[14] This yields a total of 154 countries and 3210 country-years in the panel.

We previously noted that most developed countries maintain their own versions of GSP. If our hypothesis is correct, all of these programs should have an impact on developing country trade policies, weighted perhaps by the significance of the industrialized nation's market for the exports of the country in question. However, we have data on only the United States' GSP program. This is no great loss, because the overall margin of preference conferred by the US GSP program is by most accounts fundamentally comparable to the preferences of the European Union and other developed countries (GAO [2001], UNCTAD [1999]). Furthermore, the US GSP-authorizing law stipulates that the President may base GSP eligibility

[14]Following the US GSP program guidelines cited earlier, most OPEC members and members of the communist bloc were never granted GSP eligibility (until they experienced a regime change), with some exceptions, namely, Angola, Ethiopia, Grenada, Laos, Madagascar, Mozambique, Nicaragua, Romania, and Yugoslavia (communist regimes) and Indonesia, Nigeria, and Venezuela (OPEC members). The others are thus not in our sample, which only includes a state from its first year on the GSP program.

decisions on "the extent to which other major developed countries are undertaking a comparable effort," i.e., extending GSP preferences of their own to the country in question (USTR [1999]). Thus, different GSP programs are correlated[15] and the measurement of GSP status here, while technically representing the US program only, offers a reasonable approximation of all developed country preferences for developing countries.

4.1 Key Variables

GSP Status. The dummy variable $GSP_{i,t}$ is 1 if country i was a United States GSP beneficiary in year t; 0 otherwise[16]. This information was collected from USTR [1991] and Federal Register [*various*]. The *GSP* dummy admittedly glosses over important distinctions between countries with widely-varying amounts of actual US GSP benefits. In order to capture that variation, we also construct the variable *GSP Fraction*$_{i,t}$, defined as country i's GSP exports to the US (USITC [2002]) as a percent of its total exports in year t (World Bank [2001b]). Unfortunately, this variable is available only for the last decade,[17] so we use *GSP Fraction* for sensitivity testing only.

Trade Policy Measures. Available data on aggregate national trade protection are notoriously imperfect. Our strategy is redundancy: if we obtain similar findings with each of the several most frequently used measures of trade policy, our inferences will be more robust. The most common method of measuring protectionism is to examine trade flows, not policy, in the form of trade volume divided by GDP, mainly because of data availability. Accordingly, our variable *Closure*$_{i,t}$ is country i's total imports as a percent of GDP in year t. This is subtracted from zero to make higher values represent greater import restrictiveness, yielding a sample mean of -46. It has the virtue of capturing the effect of non-tariff as well as tariff barriers. However, as many have argued (e.g., Dollar and Kraay [2001] and Rodríguez and Rodrik [2001]), trade openness reflects not just *policy* but also geography and market size (though we control on the right hand side for these factors). Among the measures which reflect policy more directly, we adopt *Duties*$_{i,t}$ (duties as a percent of total trade, from World Bank [2001b]) and *Tariff*$_{i,t}$ (the unweighted average nominal tariff, from World Bank [2001a]). These variables average 9.4 and 20.6, respectively, in our dataset. Rodríguez and Rodrik [2001] make a strong case for *Duties* as the best of an imperfect lot, since *Tariff* weights policies on small-volume products like golf putters the same as tariffs on automobiles. However, because highly protected industries have fewer imports (and thus fewer duties), *Duties* understates protection levels. Below we estimate models using these

[15] For instance, the US announced the withdrawal of Malaysia from its GSP program in October 1996, and the European Union followed suit in 1997 by slashing eligibility for all of Malaysia's chief exports (palm oil, plastics, rubber, wood, clothing, consumer electronics, and all agricultural products), if not cutting it from the program formally.

[16] The GSP eligibility of Pakistan and Argentina was halved in the late 1990s; we code this as withdrawal of GSP.

[17] Earlier data on GSP imports by country are disaggregated by 10-digit product code, by customs entry point, by month, and available only in microfiche form.

three dependent variables separately. Because data on all three are missing for a sizable portion of the country-years in the overall dataset (13, 52, and 73 percent missing, respectively), the dependent variable is the greatest constraint on the size of the samples used in these regressions.[18]

Bivariate Associations. If the hypothesis is correct, then countries on GSP should be more protectionist (with higher *Duties, Tariff*, and *Closure*) than countries dropped from GSP. In Figure 1, which displays averages across all country-years in the sample, on and off GSP, we see this is indeed true. The average ex-GSP recipient, compared to the average beneficiary, has less than half the nominal tariff and duties, and imports nearly 9 percent more of its GDP per year. This association is evident for the continuous measure of GSP benefits as well. For example, the correlation between $GSP\ Fraction_{i,t}$ and $Tariff_{i,t}$ is 0.15 ($p < 0.001$, $n = 572$). Of course, these simple summaries are by no means definitive, since they fail to control for alternative explanations of trade policy, but they nonetheless indicate the association of developing country protectionism with GSP.

4.2 Control Variables

Trend. Virtually all developing countries have liberalized their trade policies significantly over the course of the past decade or two. Since 36 countries have been dropped from the US GSP program over time, a positive correlation between GSP withdrawal and liberalization could result from this secular trend alone. To isolate GSP's impact from the secular trend, we include the variable $Trend_t$, i.e., the mean of the (relevant) dependent variable across all countries in the dataset in year t.[19]

Conditionality. Many developing countries in this time period have experienced acute financial crises, and, in most cases, sought assistance from the International Monetary Fund (IMF), whose conditionality terms typically include trade liberalization. Compliance with IMF conditionality is seriously lacking on average (e.g., IMF [1998] and Goldstein [2000]). Rodrik [1994] similarly argues that trade liberalization in the developing world has *not* been driven by pressure from international financial institutions. Nonetheless, to control for this potential cause of freer trade policies, we include the variable $IMF_{i,t}$, a dummy which is 1 if an ongoing IMF program is underway in country i in year t (Vreeland [2002]),[20] and 0 otherwise. IMF programs were underway in about 38 percent of the country-years in the dataset.

Market Size. Countries with larger markets may be more diversified and thus have a smaller proportion of GDP involved in trade. Hence we introduce a control for (the natural

[18] Testifying to the importance of redundancy for this analysis, the three measures are not highly correlated For $Duties_{i,t}$ and $Tariff_{i,t}$, $r = 0.37$ ($n = 542$); $Duties_{i,t}$ and $Closure_{i,t}$, $r = 0.13$ ($n = 1540$); $Tariff_{i,t}$ and $Closure_{i,t}$, $r = 0.42$ ($n = 864$).

[19] We thank Jagdish Bhagwati for suggesting the inclusion of this variable.

[20] Thanks to Jim Vreeland for the most current update of his dataset of IMF program participation.

log of) country i's market size in year t, *Log* $GDP_{i,t}$ (in constant 1995 US dollars), which should affect *Duties*, *Tariff*, and *Closure* in line with conventional expectations.

Income. Income is one of the most important determinants of trade flows, if not trade policies[21]. High income is also a statistically significant predictor (though not the only one) of removal from US GSP eligibility (Özden and Reinhardt [2002]). In order to limit the potential for spurious inference about the effects of GSP, we control for *Log Income*$_{i,t}$ (using per capita GDP in constant 1995 US dollars).[22]

Geography. A country's distance from important suppliers and markets affects transport costs and thus trade levels, as gravity model studies have repeatedly shown (Leamer and Levinsohn [1995]). In addition, such geography-induced transport costs may serve as a substitute for policy-created import barriers. In contrast to the usual pairwise gravity model, however, we control for location using a country-specific geographical indicator. Specifically, Gallup and Sachs [1999] give the proportion of a country's population that lives more than within 100 kilometers of a coast or navigable river (here, *Landlocked*$_i$) — though their data are not time-varying. The proportion of "landlocked" population in the dataset's average country is 0.39.

Growth. The business cycle is often said to affect trade policy. Protectionist pressures are often greatest during economic downturns (Dornbusch and Frankel [1987] and Rodrik [1995]). Yet severe recessions also may catalyze reform, while prolonged growth may retard it (Rodrik [1994]). For that reason, we control for real GDP growth (*Growth*$_{i,t}$) in our analyses (World Bank [2001b]).

5 Econometric Models

We estimate several sets of regressions, comparing countries still eligible to those withdrawn from the US GSP program. The first set (models 1, 2, and 3) concerns GSP status as a dummy variable, thereby permitting use of the entire 1976-2000 period. We lag all explanatory variables by one year (except *Landlocked*) as a first-cut method of addressing concerns about endogeneity.[23] For robustness, we estimate the same model separately for each of the three primary measures of the dependent variable. Hence, if $y_{i,t}$ is either *Duties*$_{i,t}$, *Tariff*$_{i,t}$, or *Closure*$_{i,t}$ for country i in year t then the estimated equation is

$$\begin{aligned} y_{i,t} &= \alpha + \beta_1 GSP_{i,t-1} + \beta_2 Trend_{t-1} + \beta_3 IMF_{i,t-1} + \beta_4 \left(Log\ GDP_{i,t-1}\right) \\ &\quad + \beta_5 \left(Log\ Income_{i,t-1}\right) + \beta_6 Landlocked_i + \beta_7 Growth_{i,t-1} + \varepsilon_{i,t}. \end{aligned} \tag{2}$$

[21] According to Baier and Bergstrand [2001], it is the most important determinant.

[22] The source for GDP and per capita GDP figures is World Bank [2001b].

[23] We set $GSP_{i,t-1} = 1$ for each country's first year in our dataset. (Recall that the sample begins the first year a country is eligible for GSP.)

Due to the cross-sectional time-series nature of the data, heteroscedasticity and autocorrelation are likely. A common estimation approach in this setting is feasible generalized least squares (GLS) with contemporaneous error correlation, groupwise heteroscedasticity, and first-order unit-specific autocorrelation (e.g., Greene [2000]). However, GLS assumes we know the true error covariance matrix, the basis of the FGLS transformation. Because there are $N \times (N+1)/2$ contemporaneous covariances (where N is the number of countries in the panel), and because unit-specific serial correlation draws on just one country's string of observations, good estimates of the error covariance matrix demand many more years per country than countries themselves. Using Monte Carlo simulation, Beck and Katz [1995] demonstrate, in precisely the situation our analysis faces,[24] FGLS standard errors dramatically understate true variability, whereas OLS with appropriately corrected standard errors is less efficient but consistent (see also Greene [2000]). Hence we estimate equation 2 with OLS, reporting Newey-West standard errors robust to heteroscedasticity and first-order autocorrelation (e.g., Greene [2000]).[25] Recall that β_1 should be positive in each version of the equation, using *Duties, Tariff*, and *Closure*. Table 1 displays descriptive statistics for the regression samples.

5.1 Estimation Results

The results strongly support our hypothesis that removing GSP induces liberalization. In every model, GSP is a statistically significant determinant of protection, with a powerful substantive impact as well. These findings are robust to a wide variety of sensitivity analyses.

Table 2 shows the full-sample OLS estimates of the *Duties*, *Tariff*, and *Closure* equations (models 1, 2, and 3). All models fit the data well, as evidenced by the tables' model test statistics. Adjusted R^2s in the OLS models lie between 0.31 and 0.41. Diagnostics indicate heteroscedasticity and first-order serial correlation.[26] Hence the more conserva-

[24] We have more than a hundred cross-sections but, after missing data, *at best* no more than 19 years per country

[25] We do not include error components. The random effects assumption that country-specific random errors are uncorrelated with the regressors is clearly not appropriate, given the concerns about endogeneity. Moreover, most variation in the dependent variables *and* in GSP is cross-sectional rather than longitudinal — variation that is at the heart of our analysis but which would be obscured by country-specific dummies In model 2's *Tariff* regression sample, for instance, 55 of the 111 countries have 5 or fewer observations each. Rather than subsume such cross-national variation with dummies, we control for the most important theoretically-justified cross-sectional factors, like market size, income, and geography, adding appropriately conservative standard errors. The first-difference technique is often suggested as an alternative to error components in cases like this, but here it is inappropriate because GSP is a dummy which very rarely changes (36 times out of our 3210 observations) and whose greatest effects are felt over a long stretch of subsequent years, not just one year following removal (e.g., Wooldridge [2002]). One solution, however, is a before-and-after test, looking solely at those countries ultimately dropped; we report the results of this robustness test below.

[26] Specifically, for OLS models 1, 2, 3, White's general test rejects homoscedasticity with $p < 0.01$ in each case (Greene [2000]). Regression of OLS residuals $\varepsilon_{i,t}$ on $\varepsilon_{i,t-1}$ yield estimates of first-order serial correlation

tive, heteroscedastic- and autocorrelation-consistent Newey-West standard errors are indeed appropriate. Correlations among the independent variables are very low in most cases, moderate in just a few,[27] and never higher than 0.5; multicollinearity is not a problem. Because the conventional GLS approach is more efficient but, as noted above, becomes biased in wide but short panels like ours (Beck and Katz [1995]), we conduct Hausman tests of the appropriateness of the consistent but less efficient estimator, OLS. Such tests reject the equivalence of OLS and GLS coefficients with $p < 0.01$ (for models 1, 2, 3, and 7), validating the use of OLS despite its lower efficiency. Of course, inefficiency simply raises the bar for our hypothesis tests.

Consider the OLS estimates in Table 2. Just as expected, the coefficient of *GSP* is positive and significant for all three dependent variables (models 1, 2, and 3). When other factors are held constant, a GSP recipient has average duties 1.66 points higher as percent of trade (model 1) and average tariffs higher by 3.83 percent (model 2). Furthermore, its total imports are 8.5 points lower as percent of GDP (model 3). These numbers imply that GSP recipients are roughly 15-20 percent more protectionist than countries no longer eligible, because these differences are about one-sixth to one-fifth of the means of these trade policy measures (Table 1). Had Costa Rica hypothetically been dropped from GSP in 2000, model 3 predicts it would have imported $8.6 billion instead of $7.3 billion that year.

Of course, the comparison here is between countries removed from GSP, on one hand, and the same countries before removal, *plus* all countries never dropped from GSP, on the other. If the countries ultimately dropped are systematically different from those never dropped, in some unobservable way, our inference about GSP's effect might be tainted. To confirm that our results are not affected by such bias, we re-estimated models 1, 2, and 3 using *only the 36 countries ultimately dropped* from GSP. In every case, the coefficient for GSP was still positive and significant. Even those countries ultimately dropped were more protectionist when they were eligible for GSP, controlling for other factors as well. Similarly, the GSP findings in models 1, 2, and 3 do not change if we add dummies for World Bank-defined regions.[28]

We should note that, among the control variables, income level is significant in all models. The trend in liberalization across the developing world is significant in the *Duties* and *Tariff* models while total GDP is significant in the *Tariff* and *Closure* models, all with the expected signs. On the other hand, *IMF* and *Landlock* are not significant in any of the models.

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of about $\rho = 0.8$, $p < 0.01$, for all four OLS models as well.

[27] Depending on the model and sample in question, *Log Income*$_{i,t-1}$, exhibits a correlation with $IMF_{i,t-1}$ of about -0.25, with *Log GDP*$_{i,t-1}$ of about 0.35, and with *Landlocked*$_i$ of roughly -0.50.

[28] Results available upon request.

5.2 Endogeneity of GSP

The second set of regressions addresses the potential for endogeneity of GSP status.[29] This is a critical issue, though indeterminate as to direction. Granting and removing GSP eligibility is, after all, a political decision. In particular, endogeneity may arise if a recipient's import policy affects the United States removal decision. On one hand, if US exporters (rather than primarily US import-competing producers) influence the decision, then beneficiary countries with high trade barriers of their own would be prime targets for removal. This suggests GSP recipients may be *more*, not less, open to imports than ex-beneficiaries. If so, the estimates from the first set of regressions may be conservative. On the other hand, the US may be *most* likely to maintain GSP eligibility for precisely those countries that have failed to overcome the legacy of import substitution, because they have prospered the least and are in greatest apparent need of foreign aid. This implies GSP should be associated with worse policies (e.g., high trade barriers), just as we have proposed — but for a different reason. If true, the results from our OLS regressions may overstate GSP's effect. Either way, we must explicitly address potential endogeneity bias in order to have greater confidence in our findings. However, we emphasize that this paper *makes no claim* about the direction of the reverse causality. Rather, the point is simply to see whether GSP still independently affects import policies even in a model that acknowledges its endogeneity.

We use an instrumental variables (IV) approach to isolate the "treatment effect" of GSP on trade policy when the treatment itself is endogenous. That is, imagine a prior equation,

$$GSP^*_{i,t} = \gamma' \mathbf{x}_{i,t-1} + u_{i,t} \tag{3}$$

where $GSP_{i,t} = 1$ if $GSP^*_{i,t} > 0$ but 0 otherwise, and $\mathbf{x}$ is a vector of instruments thought to be uncorrelated with ε in equation (2). Because of the discrete nature of *GSP*, the usual 2SLS instrumental variables method may overstate the coefficient estimates. Instead, we use the well-known "treatment effects" instrumental variables (IV) approach, much like a Heckman selection model but with observed trade policy outcomes even for those countries not receiving the "treatment" (GSP). This model assumes $\varepsilon_{i,t}$ in (2) and $u_{i,t}$ in (3) are correlated, and we estimate it using maximum likelihood (Greene [2000, 933-934]). We thus use values of $GSP_{i,t}$ (not $GSP_{i,t-1}$, since we are correcting for simultaneous causation here) fitted from a first-stage probit regression as the optimal instrument for $GSP_{i,t}$ in equation (2). Models 4, 5, and 6 separately apply this method to *Duties*, *Tariff*, and *Closure*, paralleling models 1, 2, and 3, reporting traditional heteroscedastic-consistent standard errors.

The decisive issue is exogeneity of the instruments. Fortunately, as Özden and Reinhardt [2002] demonstrate, there are a number of good predictors of US GSP eligibility; many of these have no conceivable direct link to the developing country's own trade policy. These include (a) a dummy denoting the presence of other foreign policy sanctions imposed by the US on country i[30]; (b) capitol-to-capitol distance from country i to the United States, in

[29] We thank Caroline Freund for suggesting these additional tests.

[30] Institute for International Economics [2000]; Office of Foreign Assets Control [2002])

miles; (c) a dummy indicating country i maintains a formal alliance with the United States[31]; (d) the percent of all once-eligible developing countries still on the US GSP program; and (e) the US GDP growth rate (World Bank [2001b]); (f) a sufficiently lagged value of *GSP* status itself. All are measured for year $t-1$, except the last, which is for year $t-3$. The US is likely to remove GSP status when it also employs national security sanctions against a target country, a criterion even written into the GSP-authorizing statute. Yet such sanctions are not directly related to the country's own import policy. Likewise, distance and alliance status affect a country's trade with the United States in particular but not its import policy overall. US macroeconomic conditions affect the pressure from domestic import-competing industries to remove *many* significant exporting nations from GSP but have little or no effect on the target country's own import barriers. We avoid concerns about endogeneity of the lagged GSP instrument by setting the lag sufficiently deep. While all results we report below are valid without the use of the $GSP_{i,t-3}$ instrument, it increases the explanatory power of the first-stage IV regression, and the use of stronger instruments has been shown to reduce IV bias (e.g., Staiger and Stock [1997]). We include these instruments, in addition to the right-hand-side variables in 2, in the $\mathbf{x}$ vector in equation 3. We verify that our instruments are properly exogenous (i.e., not correlated with ε in 2): tests of overidentifying restrictions in IV models 4, 5, 6 (and 8) all fail to reject the null of exogeneity (Davidson and MacKinnon [1993]).[32]

Table 3 presents the IV estimates of the *Duties, Tariff* and *Closure* equations (models 4, 5 and 6). *GSP*'s coefficient is highly statistically significant and in the hypothesized (positive) direction in each column.[33] Indeed, the coefficients from the IV estimation are slightly higher than the respective values in the OLS estimation. (What this implies regarding the direction of the reverse causal effect, however, is irrelevant for our claim about the independent second-stage impact of GSP.) Hence, the findings in models 1, 2, and 3 are not an artifact of endogeneity, since the association between GSP status and protectionism shows up even when controlling for endogeneity bias in the IV models.

5.3 Other Measures of GSP

The third set of regressions examines the impact of *GSP Fraction*$_{i,t}$ instead of the *GSP* dummy. This is a better measure of the GSP program as it measures GSP exports of country i to the United States (USITC [2002]) as a percent of its total exports in year t. Because the time series for *Duties* and *Tariff* are frequently interrupted and *GSP Fraction* itself is only

[31] Distance and alliance data are from the Correlates of War Project as distributed by Bennett and Stam [2000], updated by the authors to 2000.

[32] These statistics yield $p = 0.548$, $p = 0.446$, $p = 0.607$ for models 4, 5, 6, respectively.

[33] Fit in the first-stage probit (of GSP on the instruments) is quite good in each case, all with large χ^2 values and pseudo-R^2s around 0.5 or higher. Thus, by Staiger and Stock's [1997] rule of thumb, our instruments have more than adequate explanatory power.

available for the last decade (48 percent of observations), we restrict our attention to the dependent variable with the most nonmissing cells, *Closure*. We substitute *GSP Fraction* for *GSP* and use OLS as above. Because *GSP Fraction* is a continuous variable, our IV method is now standard two-stage least squares instead of the treatment effects approach used in the previous section. In all of these regressions we expect *GSP Fraction*'s coefficient to be positive, increasing trade barriers. All use the same set of controls as in equation (2), again lagged by one year (except *Landlocked*).

Models 7 and 8 in Table 4 show OLS and IV estimates for the regression of *Closure* on *GSP Fraction*. The results from the previous sections stand even if we adopt a more nuanced measure of GSP benefits. The more a country's total exports benefit from (and depend on) United States GSP duty-free status, the more closed to imports it should be. Just as expected, the coefficient of *GSP Fraction* is positive and significant in both columns. Dropping the average beneficiary from the GSP program increases its imports by 1.7 percent of its GDP in the OLS estimation. This is a more modest and conservative impact than the previous results (models 3 and 6), because GSP does not cover a country's entire export portfolio and because beneficiaries do not rely wholly on the United States alone as an export market. In other words, the impact of GSP removal would be greatest for countries like the Dominican Republic, for whom 75 percent of its 1990 global exports went to the US, with 13 percent of these qualifying for GSP duty-free treatment.

We should note that the *Trend* variable (measuring global trade policy patterns) is no longer significant in these regressions, while all the other variables maintain the same signs as in the earlier regressions.

5.4 Non-Tariff Barriers

Two additional, but subjective, measures of trade barriers offer a useful comparison. Both assess the overall restrictiveness of trade policies, including non-tariff as well as tariff barriers, grouping countries into ordered categories, annually but only for the last few years. The first is the International Monetary Fund's (IMF) "Trade Restrictiveness Index" ($TRI_{i,t}$). It weights NTBs more than tariffs (IMF [1998]), using public and private information at the IMF's disposal.[34] With 10 representing the most protectionist policy (e.g., India) and 1 the least (e.g., Hong Kong), the average for our dataset is 4.6. The second is the trade policy component (O'Driscoll, Holmes, and O'Grady [2002]) of the Heritage Foundation's "Index of Economic Freedom" ($HF_{i,t}$). This draws purely on published sources but factors in customs corruption as well as formal tariffs and NTBs. It goes from the most open score of 1 (e.g., Hong Kong) to 5 (e.g., Bangladesh), averaging 3.8.[35] In the fourth set of regressions, we test how our hypothesis fares with these subjective measures of trade barriers.

[34] We thank Anne McGuirk and Dustin Smith at the IMF's Trade Policy Division for providing these data.

[35] These two measures are only moderately correlated ($r = 0.47$, $n = 463$). Both are likewise correlated with *Duties* and *Tariff* only moderately (r = about 0.6), with *Closure* even less (r = about 0.25).

Models 9 and 10 in Table 5 give estimates (with heteroscedastic-consistent standard errors) of ordered probit regressions of *TRI* and *HF* on *GSP Fraction* for over 100 developing countries in several years in the late 1990s. *GSP Fraction* again has a statistically significant effect, increasing protectionism (higher values of *TRI* and *HF*). Holding other variables at their sample means, we find that moving from Brazil's 1998 export dependence on US GSP benefits (about 4 percent) to that of Hong Kong (zero) increases the predicted Prob($TRI_{i,t} <$ 5) by a quarter, going from 0.39 to 0.49. This accords with the observed *TRI* figures for Hong Kong and Brazil in 1998, which are 1 and 5, respectively. The same change, holding other variables at their sample means in model 10, yields an increase in the predicted Prob($HF_{i,t} < 4$) by about half, going from 0.29 to 0.43 — where Hong Kong's and Brazil's *HF* scores that year are 1 and 4.

6 Examples

In case after case, we can see trade policy following the path of GSP eligibility and withdrawal we have mapped above. Consider (South) Korea. Prior to being dropped in 1989, Korea had pursued a long, slow program of import liberalization, having cut average (unweighted) nominal tariffs a little from the 1980s average of 21 percent. In the five year period preceding graduation from GSP, import duties as a percent of imports slid down 1.2 points as a result. In the four years after being dropped, however, Korea cut the average nominal tariff by 6 points (down to 8.9 in 1993), so import duties as a percent of imports decreased much more rapidly, by 3.5 more points, reaching a low of 4.4 in 1994. Note that this occurred in the absence of any additional multilateral tariff commitments by Korea, since the Uruguay Round was not implemented until 1995.

Samoa offers another interesting illustration. From 1993 to 1996, when Samoa was ultimately dropped from the US GSP program, Samoa's imports as percent of GDP actually fell 16 points, from 75 to 59. After GSP withdrawal, however, Samoa increased its imports, up to 82 percent of GDP by 2000. Similarly, after years with a steady average nominal tariff of 9 percent, Samoa's government announced a wholesale trade liberalization program in early 1998, designed to cut tariffs to zero by 2010 (O'Driscoll, Holmes, and Kirkpatrick [2001]).

Mexico, too, is revealing. The US graduated Mexico from GSP in 1994, upon Mexico's accession to the North American Free Trade Agreement (NAFTA). This would seem an exceptional case, especially because Mexico in the early 1990s had, according to most accounts, already begun a significant program of unilateral trade liberalization. However, Mexico's imports as a percent of GDP had not increased from 1990 to 1993, and in just two years after leaving GSP it rose by over a third, from 21.7 to 30.1 percent. And this was during the 'tequila crisis,' which witnessed a severe devaluation of the peso and thus downward pressure on imports. Mexico's average nominal tariff, which had in fact increased a little from 1989 to 1994, dropped 3.4 points from 1994 to 1999, and its duties as a percent of imports

dropped to one-third of its previous level in this period as well. Granted, the catalyst for this major import liberalization was the desire for export revenue in the US market; GSP removal followed rather than started the policy change. But this is an exception that proves the rule, since Mexico had not liberalized as significantly during the GSP period. By the mid-1990s, Mexico had finally learned the lesson that you have to 'pay to play' — a lesson GSP status had obscured for years.

The experience of Chile comes close to a smoking gun in support of our claim. Chile was suspended from the GSP at the beginning of 1988 for violating internationally recognized worker rights as the Pinochet regime stalled the last stage of democratic transition (Adams [1989]). Its GSP status was later restored in 1991, after democratic elections had occurred. What happened to its trade policy in the interval? Just days after the GSP withdrawal, Chile's Finance Minister Hernan Buchi announced that the formerly "sacred" 20 percent nominal tariff would be cut to 15. He stated explicitly that the cut aimed to lower the burdensome imported input costs for Chilean exporters, to compensate for the loss of GSP duty-free status in the US market (Adams [1989]; Frasca [1988]). Chile cut its tariff another 4 points, down to 11 percent, by the year its GSP eligibility was restored, but made no cuts for the rest of the decade (once GSP was restored). Imports as a percent of GDP went up from the 1986-87 average of 26.7 to the 1989-90 score of 31.3 (a level Chile has not since reached even now), and then, upon GSP restoration, down again to 29.6 for 1992-93. The decision to drop Chile was essentially exogenous for our purposes, yet the removal of GSP increased and determined the timing of Chile's trade liberalization, and its restoration stalled that liberalization subsequently.

7 Conclusion

The aim of this paper was to contribute to the ongoing debate on the best ways to integrate the developing countries into the world trading system and to lower their trade barriers. One of the dominant views favors the "special and differential treatment of LDCs" through programs such as the GSP. However, this paper provides strong empirical evidence against such programs and our results thus indicate quite clearly that (a) remaining eligible for GSP makes a country less likely to liberalize its own trade policy and (b) the GSP "dose" matters as well, i.e., greater export dependence on US GSP preferences boosts a country's resistance to liberalization. These findings are extremely robust. First, the estimates of GSP's impact on protection are similar in statistical and substantive significance regardless of the differences among our five trade policy measures. Second, the results hold across two different measures of the independent variable, GSP status: contrasts both (1) between countries on and off GSP and (2) among countries receiving various degrees of GSP benefits equally support the hypothesis. Third, the GSP treatment effect holds up if we correct for the potential endogeneity of US GSP eligibility decisions. There is little option but to conclude that the evidence is strongly consistent with our hypothesis.

These results are quite surprising. After all, the US is not the largest trading partner for many of these developing countries, and most exports to the US by GSP beneficiaries do not qualify for GSP duty-free status. Other factors, such as IMF conditionality, the overall secular trend toward liberalization in the developing world, macroeconomic performance, or exogenous characteristics like geography and market size, are all given greater weight in conventional explanations of developing countries' trade policies. Our results indicate there is merit in some of these explanations, but the GSP program also has significant influence. What is particularly striking is that our results obtain despite the presence of several pariah states on the list of countries removed from the US GSP program — countries like Ethiopia in the 1980s, as well as Myanmar and Mauritania in the 1990s, whose import regimes verged on autarky. These countries drag our estimates down, and the use of an inefficient estimation method leaves our estimates relatively imprecise. Given these considerations, we have set up a hard test for the model. Yet, as we have found, GSP actually matters in trade policy decisions of beneficiary states.

Is endogeneity bias responsible for the apparent association between GSP and protection? We address this concern directly, and the answer is unambiguously no. First, recall that we lag the GSP variable by a year in the OLS models, and, because the US GSP review process actually takes place in the 12 months prior to the announcement, there is an effective lag of nearly two years. Second, as Özden and Reinhardt [2002] demonstrate using a discrete duration model of time till GSP withdrawal for all US GSP beneficiaries from 1976-2001, neither the state's overall trade openness, its openness to US exports in particular (as a percent of GDP), nor its duties as a percent of trade have any significant effect on GSP withdrawal decisions, when controlling for other important factors. (Rather, what matters is the volume of its exports to the US and its per capita income, plus US-specific macroeconomic conditions.) After all, the GSP as approved within the General Agreement on Tariffs and Trade legal system is not supposed to be reciprocal in nature. To be sure, the US links other issues to GSP status reviews (e.g., worker rights), but GSP is not conditioned on reciprocal market access in practice. As one observer has noted, GSP status decisions are "controlled essentially by importers" (Wilson [1992]). Third, in any case, our hypothesis passes the truest test of this objection, in IV models controlling for endogeneity bias.

Several factors might account for the negative effect of the US GSP program on the trade policies of developing countries. One of them might be the lack of lobbying by export groups for liberalization, since they face low tariffs on their exports in any case (under GSP); hence policy is determined by protectionist import-competing groups. Another might be the way the GSP eligibility is determined. The political process leading to GSP decisions is heavily influenced by protectionist domestic interest groups in the US. Since 'he who giveth may taketh away,' the non-guaranteed nature of GSP preferences prevents the recipients from fully focusing on their export sectors. Developing countries in GATT/WTO have often levied the critique that sector- and country-specific 'graduation' criteria are "contrary to principles of non-discrimination and non-reciprocity that underpin the GSP and therefore

alien to the original intentions underlying the GSP concept" (WTO [2000]).[36] Thus the negative effects of GSP should not be blamed just on developing countries, but also on the way in which GSP is administered in US, highly exposed as it is to unregulated traditional protectionist pressures. One of the main implications of our results is that participating in reciprocal trade agreements through formal institutional frameworks such as the GATT is more likely to lead to liberalization by developing countries.

As part of the buildup to what many have called the "Development Round," i.e., WTO's next multilateral trade negotiation, many developing countries have continued to lobby fellow WTO members for continued and even increased nonreciprocal trade preferences (WTO [2001a]), in some cases explicitly pleading cessation of pressure for any further liberalization of their own (e.g., WTO [1999]). Based on the evidence in this paper, we argue that the preferred scenario is one in which developing countries give up GSP in favor of the reciprocity-driven trade regime embodied in GATT/WTO relationships among developed states. The normative criteria here is the extent of trade liberalization achieved by developing countries, of course. A world in which GSP is administered outside of the GATT/WTO legal structure, exposing it to protectionist political economy dynamics within developed countries, is the least ideal.

Hopefully, our results lead to more questions than they answered. Some of these questions are about the actual political economy mechanisms that cause the effects we identified. Second, the links between GSP status and export performance need to be analyzed. Our model has implications for how GSP affects the export level of a country, but at the same time GSP eligibility has been shown to be negatively affected by export volume (Özden and Reinhardt [2002]). This endogeneity issue is crucial for correct identification of the true linkages between *exports* (if not import openness, the issue here) and GSP status. We hope to address these questions in subsequent papers.

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8 Tables and Figures

Table 1. Descriptive Statistics

Dependent:	$\text{Duties}_{i,t}$ Models 1 & 4	$\text{Tariff}_{i,t}$ Models 2 & 5	$\text{Closure}_{i,t}$ Models 3 & 6	$\text{Closure}_{i,t}$ Models 7 & 8
Dependent	8.52~6.22 [0, 55.82]	20.18~15.13 [0, 102.2]	−44.59~28.95 [−446.3, −1.2]	−46.28~26.81 [−174.9, −1.2]
Year_t	1987.3~6.5 [1976, 2000]	1991.9~5.1 [1981, 2000]	1989.0~6.9 [1976, 2000]	1995.9~2.5 [1992, 2000]
$\text{GSP}_{i,t-1}$	0.95~0.21 [0, 1]	0.91~0.28 [0, 1]	0.94~0.24 [0, 1]	—
$\text{GSP Fraction}_{i,t-1}$	—	—	—	0.90~1.52 [0, 14.79]
Trend_{t-1}	9.83~3.03 [3.92, 16.87]	21.45~5.91 [11.37, 30.69]	−45.42~3.23 [−53.4, −38.4]	−46.69~0.84 [−47.7, −45.0]
$\text{IMF}_{i,t-1}$	0.41~0.49 [0, 1]	0.51~0.50 [0, 1]	0.41~0.49 [0, 1]	0.48~0.50 [0, 1]
$\text{Log GDP}_{i,t-1}$	22.79~1.94 [17.9, 27.3]	23.48~1 84 [18.6, 27.3]	22.31~2.03 [17.1, 27.3]	22.59~2.07 [17.4, 27 3]
$\text{Log Income}_{i,t-1}$	7.23~1.18 [4.51, 10.17]	7.37~1.25 [4.59, 10.15]	7.08~1.21 [4.44, 10.17]	7.16~1.28 [4.44, 10.17]
Landlocked_i	0.40~0.37 [0, 1]	0.41~0.36 [0, 1]	0.41~0.38 [0, 1]	0 41~0.38 [0, 1]
$\text{Growth}_{i,t-1}$	3.83~5.68 [−26.5, 27.2]	3.59~4.64 [−22.9, 19.0]	3.43~6.45 [−50.2, 86.9]	3.59~6.35 [−50.2, 86.9]
Countries	112	111	140	135
Observations	1503	821	2640	993

Mean~SD, [Min, Max]

Table 2. OLS Estimates of Trade Policy Models

Dependent Variable:	$\text{Duties}_{i,t}$	$\text{Tariff}_{i,t}$	$\text{Closure}_{i,t}$
Model:	1	2	3
Method:	OLS	OLS	OLS
Years:	1976-2000	1981-2000	1976-2000
Constant	27.118**	−16.417*	−127.215**
	(3.036)	(7.256)	(11.876)
$\text{GSP}_{i,t-1}$	1.663**	3.827**	8.458*
	(0.481)	(1.189)	(3.825)
Trend_{t-1}	0.276**	0.933**	0.356
	(0.059)	(0.082)	(0.203)
$\text{IMF}_{i,t-1}$	−0.521	−0.716	0.537
	(0.367)	(1.038)	(1.028)
$\text{Log GDP}_{i,t-1}$	−0.148	2.806**	7.424**
	(0.136)	(0.401)	(0.320)
$\text{Log Income}_{i,t-1}$	−2.679**	−7.014**	−10.564**
	(0.226)	(0.813)	(0.746)
Landlocked_i	−0.342	−3.192	2.155
	(0.546)	(1.959)	(1.660)
$\text{Growth}_{i,t-1}$	0.052	0.161	−0.328*
	(0.028)	(0.084)	(0.129)
Countries	112	111	140
Observations	1503	821	2640
$\text{Freq}(\text{GSP}_{i,t-1}=0)$	68	71	157
$\overline{R}^2$	0.312	0.414	0.359
F	75.03**	39.38**	149.96**

* denotes two-tailed $p < 0.05$; **, $p < 0.01$. Newey-West robust SEs in parentheses.

Table 3. IV Estimates of Trade Policy Models

Dependent Variable:	$\text{Duties}_{i,t}$	$\text{Tariff}_{i,t}$	$\text{Closure}_{i,t}$
Model:	4	5	6
Method:	IV	IV	IV
Years:	1976-2000	1981-2000	1976-2000
Constant	26.166**	−23.971**	−132.908**
	(2.438)	(6.498)	(10.812)
$\text{GSP}_{i,t}$	2.298**	8.448**	11.846**
	(0.766)	(1.482)	(3.961)
Trend_{t-1}	0.267**	0.885**	0.350*
	(0.047)	(0.068)	(0.174)
$\text{IMF}_{i,t-1}$	−0.581	−0.948	0.328
	(0.302)	(0.894)	(0.802)
Log $\text{GDP}_{i,t-1}$	−0.130	2.893**	7.483**
	(0.102)	(0.340)	(0.250)
Log $\text{Income}_{i,t-1}$	−2.668**	−6.683**	−10.416**
	(0.169)	(0.669)	(0.572)
Landlocked_i	−0.346	−3.134	2.225
	(0.418)	(1.650)	(1.220)
$\text{Growth}_{i,t-1}$	0.051*	0.181*	−0.328**
	(0.025)	(0.078)	(0.119)
Countries	112	111	140
Observations	1503	821	2640
Freq($\text{GSP}_{i,t}$=0)	68	71	157
Model χ^2	844.12**	365.74**	1791.68**

* denotes two-tailed $p < 0.05$; **, $p < 0.01$. White robust SEs in parentheses.

Table 4. Effect of GSP Benefits on Import Penetration

Dependent Variable:	$\text{Closure}_{i,t}$	
Model:	7	8
Method:	OLS	IV
Years:	1992-2000	1992-2000
Constant	-132.188^{**}	-145.326^{**}
	(42.106)	(43.130)
$\text{GSP Fraction}_{i,t-1}$	1.688^{*}	—
	(0.676)	
$\text{GSP Fraction}_{i,t}$	—	3.099^{**}
		(1.123)
Trend_{t-1}	-0.390	-0.726
	(0.882)	(0.922)
$\text{IMF}_{i,t-1}$	-2.812	-2.656
	(1.701)	(1.705)
$\text{Log GDP}_{i,t-1}$	6.334^{**}	6.081^{**}
	(0.556)	(0.577)
$\text{Log Income}_{i,t-1}$	-10.453^{**}	-10.184^{**}
	(1.068)	(1.047)
Landlocked_{i}	3.808	4.366
	(2.603)	(2.658)
$\text{Growth}_{i,t-1}$	-0.620^{**}	-0.649^{**}
	(0.191)	(0.204)
Countries	135	135
Observations	993	993
Freq(GSP=0)	113 $(t-1)$	120 (t)
$\overline{R}^2$	0.353	0.345
F	57.17^{**}	56.06^{**}

* denotes two-tailed $p < 0.05$; **, $p < 0.01$. Newey-West robust SEs in parentheses.

Table 5. Effect of GSP Benefits on Trade Barriers

Dependent Variable:	$TRI_{i,t}$	$HF_{i,t}$
Model:	9	10
Method:	Ordered Probit	Ordered Probit
Years:	1998-2000	1996-2000
$GSP\ Fraction_{i,t-1}$	0.066*	0.102*
	(0.033)	(0.040)
$Trend_{t-1}$	0.445	0.550
	(0.293)	(0.441)
$IMF_{i,t-1}$	−0.935**	−0.300**
	(0.135)	(0.102)
$Log\ GDP_{i,t-1}$	0.064*	−0.059
	(0.030)	(0.033)
$Log\ Income_{i,t-1}$	−0.319**	−0.448**
	(0.063)	(0.058)
$Landlocked_i$	0.111	0.004
	(0.167)	(0.147)
$Growth_{i,t-1}$	−0.004	0.015
	(0.009)	(0.010)
Countries	138	120
Observations	386	546
$Freq(GSP_{i,t-1}=0)$	58	72
LL	-767.24	-716.29
Model χ^2	62.72**	159.04**
Pseudo-R^2	0.049	0.095

* denotes two-tailed $p < 0.05$; **, $p < 0.01$. Heteroscedastic-consistent robust SEs in parentheses. Ordered probit intercepts omitted for brevity.

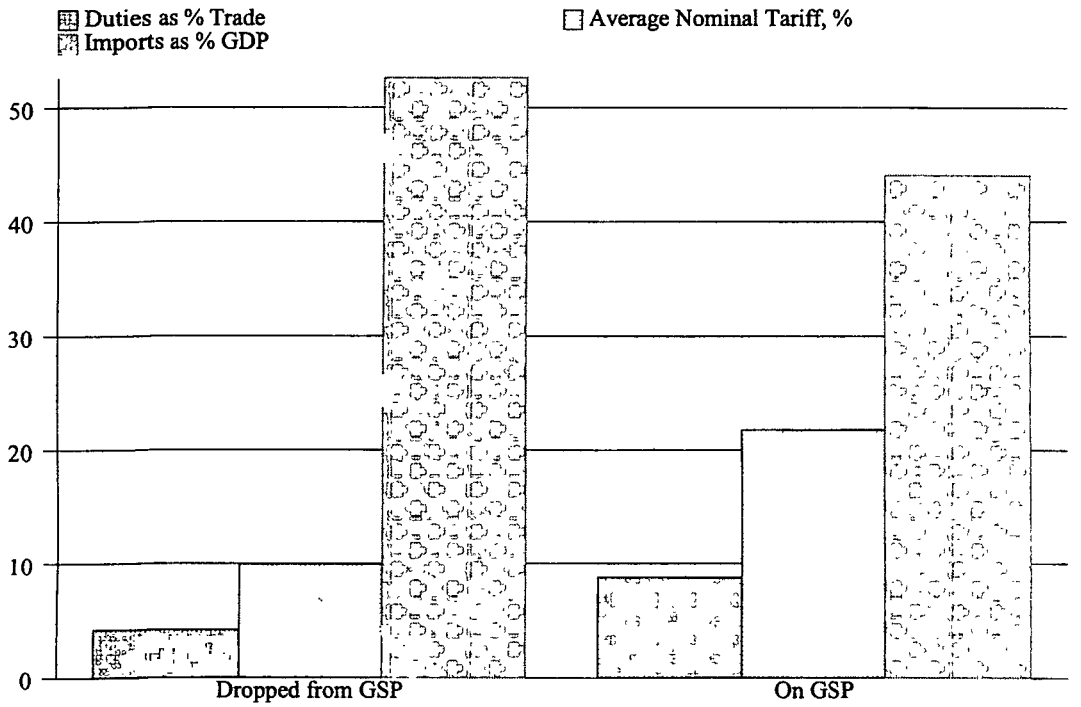

Figure 1: Trade Policy by GSP Status, Country-Year Averages, 1976-2000

The figure includes 141 (29) countries with at least one year on GSP (dropped from GSP), for a total of 2466 GSP country-years and 176 ex-GSP country-years. T-tests (with unequal variances) of equal means across GSP and ex-GSP country-years for *Duties*, *Tariff*, and *Closure*, with two-tailed $p = 0.00$, $p = 0.00$, and $p = 0.01$, respectively, reject the null hypothesis in each case.

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